# khresmoi
MEDICAL INFORMATION ANALYSIS & RETRIEVAL

Main Objectives

KHRESMOI aims to develop a multi-lingual multi-modal search and access system for biomedical information and documents. This will be achieved by:

- Effective automated information extraction from biomedical documents, including improvements using crowd sourcing and active learning, and automated estimation of the level of trust and target user expertise
- Automated analysis and indexing for medical images in 2D (X-Rays), 3D (MRI, CT), and 4D (fMRI)
- Linking information extracted from unstructured

- or semi-structured biomedical texts and images to structured information in knowledge bases
- Support of cross-language search, including multi-lingual queries, and returning machine-translated pertinent excerpts
- Adaptive user interfaces to assist in formulating queries and display search results via ergonomic and interactive visualizations

The research will flow into several open source components, which will be integrated into an innovative open architecture for robust and scalable biomedical information search.
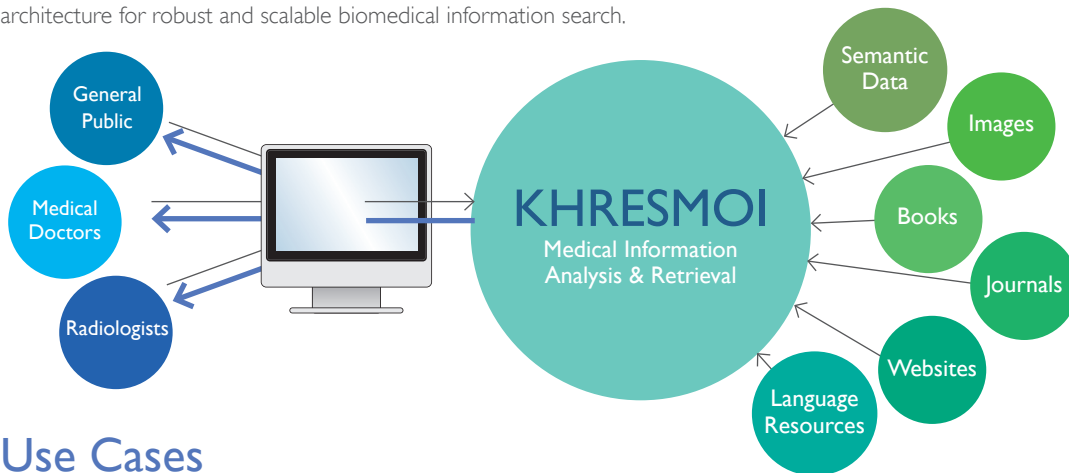
Use Cases

- Members of the general public want access to reliable and understandable medical information in their own language
- Clinicians and general practitioners need accurate answers rapidly – a search on PubMed requires on average 30 minutes, while clinicians typically have 5 minutes available. Furthermore, over 40% of searches fail to provide relevant information
- Radiologists are drowning in images and need improved automated support for their analysis – at larger hospitals over 100GB (over 100'000 images) are produced per day

Representative groups of end users are available for sizable evaluations, accessed through a medical search engine with 11'000 queries per day, a professional association of 2'700 medical doctors, and two radiology departments with 175 radiologists.

Expected Impact

Medical Impact: Improve the access to medical information for doctors, so that they have more time to talk to and to treat patients, having all the information required for doing so more effectively.
Convert the flood of radiological image data into a boon instead of a curse.

Scientific Impact: Address the lack of publicly available large-scale data sets and realistic task-based scenarios on which to assess new technologies.
Make available cutting edge techniques implemented in open source software.

Industrial Impact: Improve existing open source products' stability, features and performance, and hence their attractiveness and suitability for wider deployment.

Public Impact: Members of the public will be using the Health on the Net search engine, improved by the KHRESMOI technology, relatively early in the project.

http://khresmoi.eu